ANDALUS INTERNATIONAL SCHOOLS

SCIENCE DEPARTMENT

ACCREDITED cognia

CHAPTER 1 The Nature of Science

LESSON 3 What Do You Know about Science Tools and Safety Rules?

Lesson 3

What Do You Know about Science Tools and Safety Rules?

WARM-UP QUESTION

What tool can the boy use to measure the length of the desk? Circle your answer.

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What tool can the boy use to measure the length of the desk? Circle your answer.

Lesson 3

What Do You Know about Science Tools and Safety Rules?

Vocabulary

tool

measure

DIRECTED PRACTICE

MATERIALS

meterstick

ruler

bookshelf

book

Measure It

Ask a question: What tool will be used?

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DIRECTED PRACTICE

MATERIALS

meterstick

ruler

bookshelf

book

1 **Observe** the book. Which tool will you use to measure its length? **Record.**

Measure the length of the book. **Record.**

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2 **Observe** the bookshelf.
Which tool will you use to measure its length?
Record.

Measure the length of the bookshelf. **Record.**

	Book	Bookshelf
tool		
length (cm)		

2 **Observe** the bookshelf.
Which tool will you use to measure its length?
Record.

Measure the length of the bookshelf. **Record.**

	Book	Bookshelf
tool	ruler	meterstick
length (cm)		

3 Draw a conclusion.

Did you use different tools?

Why or why not?

_____

_____

3 **Draw a conclusion.**

Did you use different tools?

Why or why not?

Yes, I used different tools because the book and the bookshelf have different lengths.

TOOLS

Scientists use different tools. A **tool** is something that helps scientists answer their questions in their work.

TOOLS

Some tools help scientists observe.

Other tools help scientists measure.

TOOLS

Write

Why do scientists use tools?

_____

_____

Write Why do scientists use tools?

They use tools to help them answer their questions in their work.

Tools for Observing

A magnifying glass makes objects look larger than they are.

Scientists can see things in greater detail.

Tools for Observing

A telescope is a tool that scientists use to see objects in the sky.

It makes objects in the sky look larger.

Tools for Observing

Scientists can observe the stars and planets with telescopes.

Draw what the boy might see through the telescope.

Draw what the boy might see through the telescope.

Draw what the boy might see through the telescope.

Tools for Measuring

Scientists use tools to measure.

To **measure** means to use a tool to find the time, temperature, size, or amount of something.

Tools for Measuring

A stopwatch measures how much time something takes.

Tools for Measuring

Scientists use thermometers to measure temperatures in degrees Celsius or Fahrenheit.

Tools for Measuring

Temperature is howhot or cold something is.

What is the temperature?	
Day	**Temp °C**
Sunday	
Monday	
Tuesday	
Wednesday	
Thursday	
Friday	
Saturday	

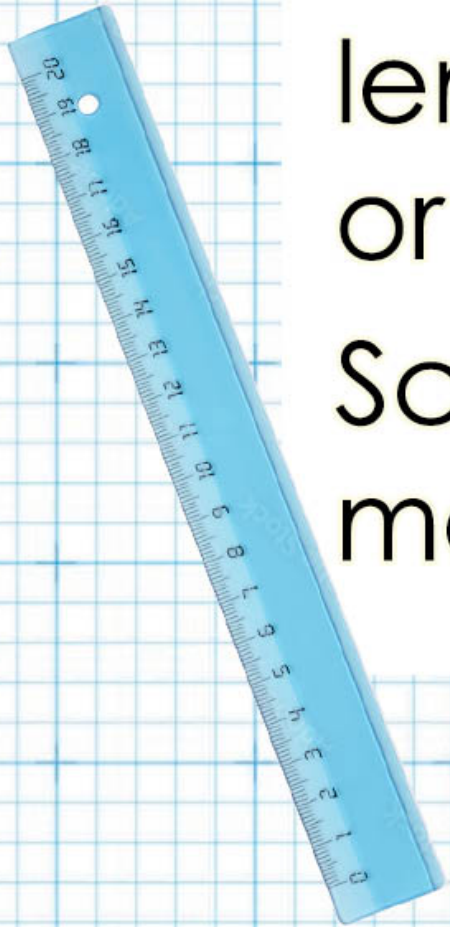
HOME ACTIVITY

Measure the temperature every day at 7 a.m. for a week. Record your data. Compare your data with your classmates.

What is the temperature?	
Day	**Temp °C**
Sunday	34°C
Monday	33°C
Tuesday	31°C
Wednesday	30°C
Thursday	30°C
Friday	30°C
Saturday	32°C

HOME ACTIVITY

Measure the temperature every day at 7 a.m. for a week. Record your data. Compare your data with your classmates.



A ruler measures length in centimeters or inches.

Scientists use rulers to measure objects.

A meterstick measures length in centimeters or meters.

Scientists use metersticks to measure longer objects.

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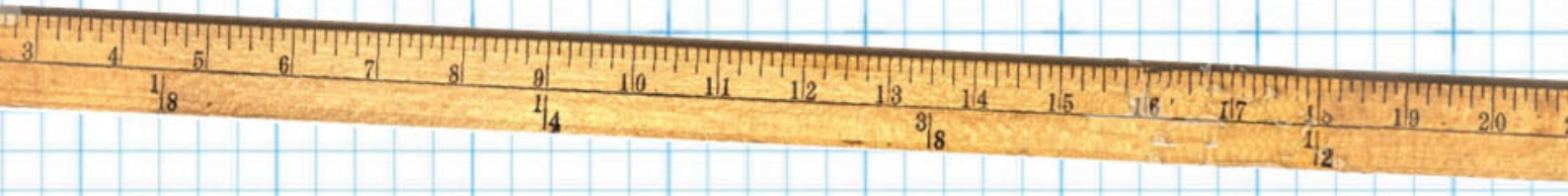

A **pan balance** measures the mass of objects in grams and kilograms.

Mass is the amount of matter in an object.

A **scale** measures the weight of objects.
It measures weight in Newtons.

Weight is how heavy an object is.

Write

What are two things you can measure using a meterstick?

_____

_____

Write

What are two things you can measure using a meterstick?

Door, table.

Other Tools for Measuring

A **measuring cup**, **graduated cylinder**, and **dropper** measure the volume of liquids.

Other Tools for Measuring

They measure volume in milliliters. Volume is theamount of space that matter takes up.

Write

What tools can you use to measure the volume of a liquid?

_____

_____

Write What tools can you use to measure the volume of a liquid?

Measuring cup.

Graduated cylinder.

Dropper.

Safety Rules

Follow the safety rules when you do science activities to keep yourself safe.

1. Tie your hair back if it is long.
2. Wear gloves and an apron.
3. Wear safety goggles when needed.
4. Follow all instructions carefully.
5. Ask your teacher if you are not sure about an experiment.

6. Tell the teacher immediately if you observe unsafe conditions.
7. Never run in the laboratory.
8. Do not eat or drink in the laboratory.
9. Clean your work area and wash your hands when you finish your experiment.

Write two rules you follow in the science laboratory.

_____

_____

6. Tell the teacher immediately if you observe unsafe conditions.
7. Never run in the laboratory.
8. Do not eat or drink in the laboratory.
9. Clean your work area and wash your hands when you finish your experiment.

Write two rules you follow in the science laboratory.

I wear gloves and an apron.

I wear safety goggles when needed.

This girl wears safety goggles, gloves, and an apron to be safe.

The girl asks the teacher about the experiment.

The girl washes her hands after the experiment.

Picture Clue Look at the picture. What does the girl wear to keep her eyes safe?

_____

Write Why should you follow these safety rules?

_____

_____

Picture Clue Look at the picture. What does the girl wear to keep her eyes safe?

Safety goggles.

Write Why should you follow these safety rules?

to keep myself and others safe.

Estimate and Measure

Math Skill

Estimate to find a number close to the exact number.
Measure to find an exact measurement using a tool.

Apply Math

Estimate and then measure the length of each object in the picture. Compare the estimated length to the exact length.

APPLY MATH

Object	Estimated length	Exact length
crayon		
eraser		
toothbrush		

How close were your estimations to the exact length?

_____

GUIDED PRACTICE

MATERIALS

10 blocks

stopwatch

Measuring Time

Ask a question: How long will it take to build a tower using 10 blocks?

GUIDED PRACTICE

MATERIALS

10 blocks

stopwatch

1. Ask your partner to build a tower of 10 blocks.
2. **Measure** the time it takes for your partner to finish. **Record.**
3. Trade places with your partner. Repeat.

Time (min.)	
You	Your Partner
_____	_____

4 **Draw a conclusion.**

Who finished faster?

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_____

_____

_____

LESSON REVIEW

1 Vocabulary

Fill in the space.

A _____ is something that helps scientists do their work.

2 Identify

Circle the tool you can use to measure the length of the classroom board.

LESSON REVIEW

1 Vocabulary

Fill in the space.

A tool is something that helps scientists do their work.

2 Identify

Circle the tool you can use to measure the length of the classroom board.

LESSON REVIEW

1 Vocabulary

Fill in the space.

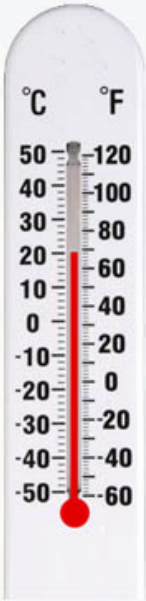
A tool is something that helps scientists do their work.

2 Identify

Circle the tool you can use to measure the length of the classroom board.

3 Apply

Look at the picture. Read the thermometer and write the temperature in Celsius and in Fahrenheit.



_____ Celsius

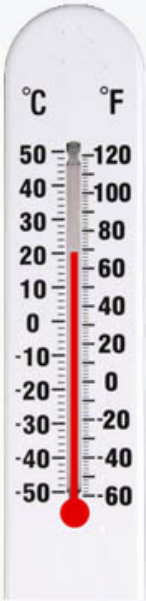
_____ Fahrenheit

3 Apply

Look at the picture. Read the thermometer and write the temperature in Celsius and in Fahrenheit.

20 °C Celsius

70 °F Fahrenheit



4 **Explain**

What should you do after finishing an experiment?

_____

_____

_____

4 **Explain**

What should you do after finishing an experiment?

I should clean my work area and wash my hands when I finish the experiment.

5 Picture Clue

Look at the picture. Circle two ways this girl is following the safety rules.

5 Picture Clue

Look at the picture. Circle two ways this girl is following the safety rules.

Name _____

Date _____

Vocabulary

1 **Write** the word that best completes each sentence.

tools	measure

Scientists use different ____tools____.

Scientists use a meterstick to ____measure____ length.

Understand

2 Match each tool with its use.

A ruler	measures temperature.
A balance	measures time.
A thermometer	mecsures the volume of a liquid.
A stopwatch	mecsures length.
A measuring cup	mecsures mass.

Apply Concepts

3 Look at the pictures. Then answer the questions.

What is the time?

The time is 10:10.

What is the volume of the liquid?

The volume is approximately 300 ml.